

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-22 remain active in this case, Claims 1 and 19 having been amended by the present amendment.

In the outstanding Office Action, Claim 19 was finally rejected under 35 USC §112, 2nd para., as being indefinite and under 35 U.S.C. §102(b) as being anticipated by Specht (USP 4,805,123); Claims 1-4, 8-11, and 16-18 and 22 were finally rejected under 35 U.S.C. §103(a) as being unpatentable over Specht in view of Alumot (USP 5,699,447) and further in view of newly cited Floeder (US 6,950,547); Claim 22 was finally rejected under 35 U.S.C. §103(a) as being unpatentable over Specht in view of Alumot; and Claims 20-21 were finally rejected under 35 U.S.C. §103(a) as being unpatentable over Specht in view of official notice (MPEP 2144.03). However, Claims 5-7 and 12-15 were objected to as being dependent upon a rejected base claim, but were otherwise indicated as including allowable subject matter if rewritten in independent form.

Applicants acknowledge with appreciation the indication that Claims 5-7 and 12-15 include allowable subject matter. However, since Applicants consider that amended Claim 1 is allowable, Claims 5-7 and 12-15 have presently been maintained in dependent form.

In light of the outstanding grounds for rejection, Claim 1 has been amended to clarify the claimed invention and thereby more clearly patentably define over the cited prior art. To that end, amended Claim 1 clarifies that the pattern inspection apparatus is configured to execute the inspection procedure of FIG. 5 (see the specification, page 14, line 1, to page 17, line 18). Further, Claim 19 has been amended to clarify that the “file” contains repeated pattern data, and the repeated pattern area detector performs die-to-die inspection on repeated pattern data corresponding to a repeated pattern area when it detects the repeated pattern area.

Amended Claim 19 is supported by the specification, page 22, lines 13 to 26. No new matter has been added.

In response to the rejection of Claim 19 under 35 USC 112, 2nd para., Claim 19 has been amended to clarify the expression “from the same file.” To that end, amended Claim 19 has been amended to recite, -- from the same file, in which repeated pattern data is included-- , thereby to clarify what is contained in the “file.” In view of the amendment to Claim 19, the rejection of Claim 19 under 35 USC 112, 2nd para., is believed to have been overcome and withdrawal thereof is respectfully requested.

Turning now to the rejection of Claim 19 as being anticipated by Specht, Applicants respectfully request reconsideration of this ground for rejection because in Applicants’ view Specht clearly does not teach each feature stated in amended Claim 19. On the contrary, Specht in FIG. 3 discloses a defect detector subsystem 44 including a detector having two independent modes, i.e., a die-to-database mode and die-to-die mode, wherein either of these modes is permitted to be used (see col. 7, lines 25 and 26).

In contrast, in amended Claim 19, design pattern data are analyzed to judge whether the patterns are included in the same file. If the patterns are generated from the same file, it can be determined that the area including them is the repeated pattern area (see the specification, page 22, lines 13 to 26). Die-to-die inspection is executed on the thus detected repeated pattern area (see the specification, page 23, lines 1 to 4).

Thus, in the claimed invention recited in Claim 19, repeated pattern area are detected in design data, and die-to-die inspection is executed only on the measurement data in the detected area. Applicants consider that this is a significant difference patentably distinguishing Claim 19 in operation mode from Specht. Therefore withdrawal of the outstanding rejection of Claim 19 under 35 USC §102 is believed to be in order and is respectfully requested.

In view of the amendment to Claim 1, it is respectfully submitted that the outstanding rejection of Claim 1 as being obvious over Specht in view of Alumot and Floeder has also been overcome. More specifically, the outstanding Office Action bases the finding of obviousness on the following reasoning:

- (a) Specht discloses the basic structure of the pattern inspection apparatus of the present invention, but does not disclose or teach detection of a repeated pattern using second imaging means.
- (b) Alumot discloses that the entire surface of a wafer is detected at low resolution to detect an area in which a defect may exist with high probability.
- (c) Further, Floeder teaches that the sizes of defect candidates are measured if they exist.
- (d) Based on the combination of these references, the present invention is obvious.

However, in the pattern inspection apparatus recited in amended Claim 1, after the second imaging optics forms a second optical image, the low-resolution image data generator generates second detected pattern data corresponding to the entire pattern area, using the second optical image, and the repeated pattern generator detects whether there exist repeated area candidates. Namely, in the claimed invention recited in amended Claim 1, a defect is not directly detected in the entire surface of a wafer, but defect inspection is performed after the repeated pattern area is detected. Applicants therefore respectfully submit that amended Claim 1 fundamentally differs in concept from Alumot and Floeder.

Furthermore, amended claim 1 also recites that the first imaging optics forms the first optical images of the candidates, the detected pattern data generator generates the first detected pattern data of the candidates, and the comparator compares the first detected pattern

data by die-to-die comparison. It is respectfully submitted that these features and the functionality thereby attained likewise are neither disclosed nor obviated by the combination of Specht, Alumot and Floeder. Therefore, amended Claim 1 and the claims dependent therefrom are also believed to be patentably distinguishing over the cited references and it is therefore respectfully submitted that withdrawal of the remaining grounds for rejection of Claims 1-22 is in order and is respectfully requested.

Consequently, in view of the present amendment and in light of the above comments, no further issues are believed to be outstanding, and Claims 1-22 are believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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